



State of Texas

TEX-AN Next Generation

**Service Delivery
Management Plan**

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1. INTRODUCTION

1.1. Purpose

The purpose of this Service Delivery Management Plan is to document **tw telecom** processes and procedures for ongoing management of the end-to-end delivery of Services to DIR and DIR Customers.

1.2. Audience

This Service Delivery Management Plan is intended for the TEX-AN Board, key stakeholders, and the core service delivery team.

2. SERVICE DELIVERY MANAGEMENT OVERVIEW

2.1. Service Delivery Plan Approach

This Service Delivery Management Plan employs processes to ensure that DIR and DIR customers receive effective support and end-to-end delivery and management of services.

tw telecom is committed to our customer's and their experience with service delivery and support. To this end, we have defined processes and procedures that have been developed as a result of customer feedback that are focused on ensuring a positive experience when working with **tw telecom**. These processes are outlined in this document.

2.2. Sources of Change

Any changes to this document will be mutually agreed upon between **tw telecom** and DIR.

2.3. Key Personnel

<p>Lead Account Manager (Relationship Account Manager)</p> <ul style="list-style-type: none"> • Lead member of your support team, with a focus on the delivery of new services and applications • Lead Account Manager will partner with and support account managers in other Texas markets (San Antonio, Fort Worth, El Paso, Dallas and Houston) who have responsibility for driving TEX-AN NG business in their respective markets. • Specializes in designing network solutions for any of your needs. 	<p>Mark Strobel - Austin (512) 485-1790 - Voice mark.strobel@twtelecom.com</p> <p><i>There are five additional Account Managers within TX to assist in supporting TEX-AN NG customers.</i></p>
<p>Lead Network Application Engineer (Technical Sales Support)</p> <ul style="list-style-type: none"> • Supports any technical aspects of your solutions and services pre and post sales. • Lead Network Application Engineer will partner with and support Network Application Engineers in other Texas markets (San Antonio, Fort Worth, El Paso, Dallas and Houston) who have responsibility for supporting TEX-AN NG technical needs in their respective markets. • Assists in all pre-sales design, configuration, diagrams and requirements as well as ongoing support and review with the lead of the Senior Account Executive. • Works in tandem with the Account Manager as part of the account team to provide complete technical support resources for any and all applications/services. 	<p>Dave Stewart - Austin (512) 485-1798 Voice dave.stewart@twtelecom.com</p> <p>Casey Dodson – Austin (512) 485-1759 Voice casey.dodson@twtelecom.com</p> <p><i>There are twelve additional NAEs within TX to assist in supporting TEX-AN NG customers.</i></p>

<p>Lead Voice Application Engineer</p> <ul style="list-style-type: none"> Provides expert technical sales engineering support for complex voice solutions. Lead Voice Application Engineer will partner with and support Voice Application Engineers in other Texas markets (San Antonio, Fort Worth, El Paso, Dallas and Houston) who have responsibility for supporting TEX-AN NG voice-related technical needs in their respective markets. Works with the customer, sales and sales engineering for the technical design and feasibility in complex voice applications and solutions. Coordinates post sale technical assurance interview with the customer and vendor. Ensures/validates the Order for timely and accurate completion. Provides the customer, vendor and internal organizations confirmation of the final technical assurance for the solution/order. 	<p>Mike Debenedictis - Austin (512) 485-1757 Voice mike.debenedictis@twtelecom.com</p> <p><i>There are three additional Voice Application Engineers within TX markets to assist in supporting TEX-AN NG customers.</i></p>
<p>Sales Director (Contract Administrator)</p> <ul style="list-style-type: none"> The manager responsible for the assignment and performance of the Account Executive and overall account team. Frequently supports complex application opportunities and can serve as a point of contact for the escalation of issues or needs. 	<p>Patrick Kufrovich - Austin (512) 485-1788 Voice patrick.kufrovich@twtelecom.com</p>
<p>Vice President and General Manager</p> <ul style="list-style-type: none"> Signature authority for contract negotiations Executive contact for the majority of support Overall sales and operations responsibility for the respective region 	<p>Rick Brackeen - Austin (512) 485-1761 Voice rick.brackeen@twtelecom.com</p>
<p>Customer Project Manager</p> <ul style="list-style-type: none"> Dedicated CPM resource assigned who functions as the single point of contact for all implementation needs. CPM resource is always available to customers on a 24/7 basis. Customers will generally receive customized communications based upon specific account needs. Expedite requests receive automatic approval from Service Delivery. Requests for after hours activities take priority over all others. Skilled technicians are assigned to support specific customer accounts. CPM will have expert knowledge of customer's deployed networks and uses. CPM works with local Customer Project Coordinators in each respective market to assist with the ordering and implementation on a local basis. 	<p>Cory Bolton (303) 566-5846 cory.bolton@twtelecom.com</p>

<p>Director of Operations</p> <ul style="list-style-type: none"> • Responsible for the city infrastructure. • Work with Director of Operations in other TX markets regarding installations related to the TEX-AN NG contract and DIR customers • Manages technicians, engineers and outside plant team to ensure we build and maintain the highest performing network possible. 	<p>Victor Gonzalez - Austin (512) 485-6394 Voice victor.gonzalez@twtelecom.com</p> <ul style="list-style-type: none"> • <i>There are five additional Operations Directors within TX markets to assist in supporting TEX-AN NG customers.</i> •
<p>Senior Service Manager</p> <ul style="list-style-type: none"> • Act as the single point of escalation to assigned customers. • Manage the service plan, MSA or SLA, and escalation procedures for assigned customers. • Ensure escalation procedures are current at all times. • Manage resources via front-line supervision. • Gain intimate knowledge of the assigned customer's services and products. • Respond promptly to service requests. • Proactively identify and resolve procedural order flow or technical issues that are potential customer service problems. • Demonstrate leadership in resolving issues and concerns for customers' services. Monitor and follow through to resolution. • Provide a single point of contact on Tier II services and maintenance escalations if the established escalation process fails. • Provide 24x7 support to the customer as needed for emergencies, special routines, cut-over and any and all activity the involves or touches the customer's products and services. • Partner/align with the Implementation Project Manager supporting assigned customers. • Interface with all operating teams in field operations, NOC, sales teams and engineering as needed. • Partner/align with the sales team. • Partner/align with city ops and sales to provide quality coordinated on-site service for customers. • Provide data and feedback to other internal organizations. Initiate and maintain ongoing discussions with sales on growth areas and customer performance expectations. • Provide input on new projects and forecasting for assigned customer as needed to ensure proper service levels will be achieved • Gather customer expectations and provide metrics to support quality of experience. 	<p>Sharlee Neet (303) 566-5951 sharlee.neet@twtelecom.com</p>

Account Management Specialist (Billing Manager)

- Manages the customer's experience *post-installation* to ensure complete customer satisfaction and to ensure all customer needs are met.
- Primary point of contact on non-sales related activity
- Inventory management:
 - Complete inventory tracking and updates
 - Perform sales notification and tracking of expired services
- Monitor completed orders, update inventory and provide proactive notification of changes
- Contract compliance (i.e.: expiration, MSA adherence, renewals, pricing)
- Escalations as necessary where the customer relationship may be in jeopardy (i.e.: issues with the Denver Operations Center in closing a ticket, slow moving order escalation and prolonged bill disputes)
- Develop Customer Account Profiles with information such as complete inventory, account numbers, monthly run rate, bill dispute history and trouble ticket history

Shannon Jones

(512) 485-6395

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3. SERVICE DELIVERY MANAGEMENT PROCEDURES

3.1. Support for DIR or Customer(s) conferences

tw telecom is committed to supporting DIR or DIR customers in any and all conferences that would benefit from **tw telecom**'s services. It is our intent to thoroughly educate DIR and DIR customers on our products and services and encourage them to use these services through conferences or other means of training/education. DIR uses **tw telecom** services today and we have demonstrated our ability to participate in conferences and other similar functions where needed.

3.2. Ongoing Training

tw telecom will work with DIR to provide training on our complete order process so there is a clear understanding of how orders are placed within **tw telecom**, processed by **tw telecom**, provisioned and ready for test and turn up, and then billed. This will also help to identify any special requirements that DIR or the agencies might have to ensure that **tw telecom** addresses their needs. Any additional required training on **tw telecom**'s web portal or other processes can be provided as needed.

3.3. Technical Support

Technical support and trouble resolution are provided by **tw telecom**'s Denver Operations Center.

The Denver Operations Center (DOC) will remotely provide network administration, operations and maintenance support services for the majority of our Internet, data, transport and voice services. The DOC provides around-the-clock proactive monitoring for all its services. Once a service issue has been identified and recorded into the trouble ticket management database, **tw telecom**'s highly trained customer care staff works one-on-one with the customer providing ongoing support and updates until resolution is achieved. The DOC maintains, as an objective for on-net services, a Mean-Time-To-Repair (MTTR) interval of less than two (2) hours and six (6) hours for off-net services.

Denver Operations Center Capabilities

tw telecom's highly skilled operations specialists are available to provide continuous support of the following:

- Monitoring **tw telecom**'s networks
- Responding to network alarms
- Troubleshooting and expeditiously correcting potential issues as they arise.

tw telecom's monitoring systems provide continuous fault management status with the ability to detect, isolate and correct malfunctions in **tw telecom**'s entire metropolitan and Internet backbone networks. **tw telecom**'s monitoring systems also have the capability to report all available major, minor and power alarms that may potentially affect a customer's service.

To ensure the highest level of customer service availability, **tw telecom**'s core metropolitan networks are designed utilizing either SONET or Ethernet technology, connected via optical fibers. Depending upon the platform utilized, path-protected or dual

path, SONET-based services are equipped with Automatic Protection Switching (APS) for a fail-over time of 50ms or less. Ethernet platforms provide redundant link restoration by utilizing either Rapid Spanning Tree Protocol (RSTP) or Spanning Tree Protocol (STP).

In the unlikely event of a service interruption resulting from damage to a fiber optic cable, emergency restoration will be completed in an expeditious and timely manner. Local crews will maintain the fiber optic network. Restoration of the fiber cable represents the highest priority for these highly trained and well-equipped crews. Restoration work is performed according to written procedures with both line crews and fiber splicing crews at the scene.

3.4. Support of Customers in transition

tw telecom will assign a long-term dedicated Customer Project Manager (CPM) to DIR's account. The role of the CPM is to manage and coordinate all aspects of the provisioning process for the State of Texas. On any given project, the CPM will coordinate internal and external project calls with the frequency of the call be determined by the State. During these calls the CPM will go over all aspects of the project which include updates on status on builds, type II details, vendor installation, and transition dates. The CPM will also produce a detailed project plan for all sites that require a build. The Project Plan will track all aspects of the build along with the standard install process. The CPM will also produce an order tracking worksheet. This sheet will track all critical dates along with the scheduled transition date and soak period. Both documents will be updated and sent prior to all calls.

3.5. Inventory/Asset Management

DIR's Account Management Specialist (AMS) is responsible for the life-cycle management of this project and will be DIR's primary contact for non-sales related activities. This position manages the customer's experience *post-installation* to ensure complete customer satisfaction and to ensure all customer needs are met. One of the AMS's primary responsibilities includes inventory management and will cover all inventory aspects of the contract including billing detail, sit survey records, network equipment, and any other items essential to this project. Typical inventory reporting consists of the services information (product, bandwidth, circuit IDs) and the invoice info (account number, Monthly Recurring Charge, installation and expiration dates). Many of our accounts vary in terms of reporting and **tw telecom** will work with DIR to provide the required components.

Inventory may be reviewed with DIR at the Quarterly Stewardship Meetings. **tw telecom** will be happy to partner with DIR in creating an inventory database or spreadsheet that best meet's your needs. A baseline network inventory will be delivered to DIR within 90 days of contract execution.

3.6. Standard Reporting

Standard reporting beyond what can be found on our customer portal, MyPortal, as described below can be provided by DIR's Account Management Specialist.

MyPortal has been designed with based in feedback from our customers with our customer best interest in mind.

MyPortal is **tw telecom**'s on-line self-service tool where customers can easily manage their accounts around-the-clock. MyPortal is confidential and secure. Customers can easily and efficiently perform self-service transactions without having to place a call. Current portal functionality includes:

MyHome

MyHome provides a one screen overview that includes total invoice due amount, status information for in-progress orders, and trouble ticket status. MyHome includes the main page view which can be customized to include all of the information that is important to a particular customer. The customize link provides options to change the information seen on the main MyHome view.

Customers have the ability to add additional accounts or change their account information. Setting up customized view options allows customers with certain roles (e.g. billing) to only view the information that is most pertinent to them.

MyServices

Within the **tw telecom** MyServices web portal, customers can easily view the performance of various service components. MyServices provides performance monitoring data for **tw telecom**'s IP VPN and EIS/DIA services. New customers can also take advantage of performance monitoring for our ENLAN and SNLAN basic product services.

Customers can view their hour-to-hour Internet bandwidth utilization against what they purchased. As they view how their services are performing throughout the day, the utilization and trending information will better manage their network and business.

Performance monitoring gives customers the ability to view the performance of these services by location within the **tw telecom** network.

MyOrders

MyOrders gives customers the ability to view the status of in-progress and closed orders going back 12 months. Order tracking and detail allows them to view their order during the installation process.

MyTickets

MyTickets gives customers the ability to create new trouble tickets on-line and have real-time access to ticket detail and status. Customers can also view the status of open and closed tickets going back 12 months and can easily create a trouble ticket on-line without having to place a call.

MyBilling

MyBilling gives customers access to their **tw telecom** invoices on-line. It also allows them to download their billing data through our secure MyBilling website. When customers sign up for MyBilling, they can also use **tw telecom**'s electronic invoice payment service, ePay, which provides the added convenience of easily and securely paying bills on-line.

MyDisputes

MyDisputes allows customers to submit and review any disputed charges on-line and can review complete details on the specific charges, date ranges and amounts being disputed.

MyChange Requests

MyChangeRequests lets customers view, track and submit their change requests. Customers can submit requests to add, change and delete LD account codes and submit IP Address, BGP and Static Internet Routing requests, and also DNS Change requests.

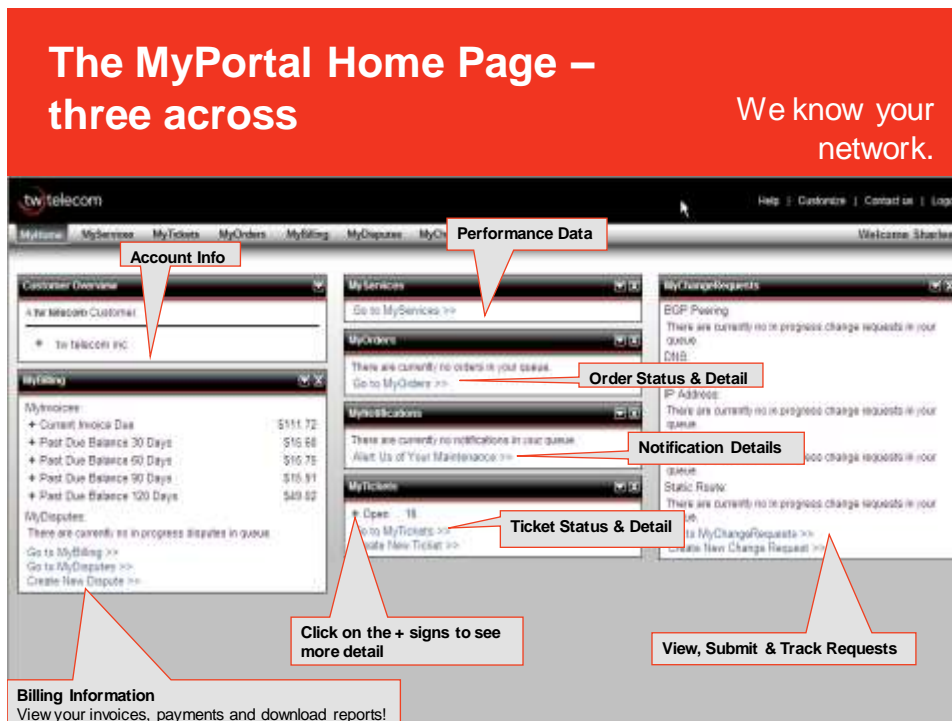
MyNotifications

MyNotifications gives customers visibility to any **tw telecom** maintenance notifications. Customers can check the time, duration and status of effected circuits as well as alert **tw telecom** of any maintenance activities the customer has scheduled.

Example screen shots from MyPortal are shown below.

The MyPortal Home Page – three across

We know your network.



The screenshot shows the MyPortal Home Page with the following sections and callouts:

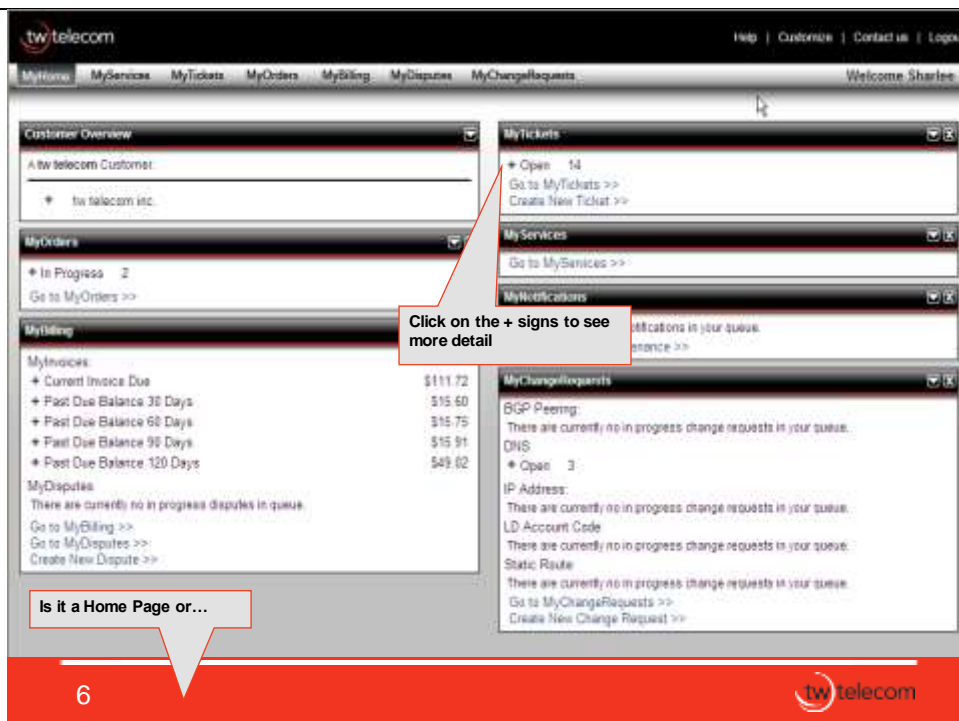
- Account Info**: Points to the Customer Overview section.
- Performance Data**: Points to the MyServices section.
- Order Status & Detail**: Points to the MyOrders section.
- Notification Details**: Points to the MyNotifications section.
- Ticket Status & Detail**: Points to the MyTickets section.
- View, Submit & Track Requests**: Points to the MyChangeRequests section.
- Billing Information**: Points to the MyBilling section.
- Click on the + signs to see more detail**: Points to the expand/collapse icons in the MyBilling section.

The MyBilling section displays the following data:

MyInvoices	
+ Current Invoice Due	\$111.72
+ Past Due Balance 30 Days	\$16.66
+ Past Due Balance 60 Days	\$16.75
+ Past Due Balance 90 Days	\$16.91
+ Past Due Balance 120 Days	\$49.62

The MyDisputes section displays the following data:

MyDisputes	
There are currently no in progress disputes in queue.	



3.7. Enhanced Reporting

tw telecom has made the majority of customer information available on our external website as described above. Enhanced reporting can be provided by DIR's Account Management Specialist once we understand what types of reports and information that DIR would like to receive.

3.8. Trouble Resolution

Technical service troubles experienced by our customers are handled by the Denver Operations Center (DOC) and O'Fallon Operations Center (OOC).

Service affecting issues are documented within the **tw telecom** trouble ticketing system. To ensure seamless communication, all information regarding a customer's trouble ticket is stored in a secure central location where updates on the status of the resolution are documented.

tw telecom specialists monitor the progress of the issue to ensure timely resolution to the problem.

The Operations Centers work closely, and in conjunction with, City Sales and Operations personnel to coordinate necessary repairs for service outages and communications to our customers.

tw telecom's Reactive Trouble Ticketing Process

The process includes:

- The customer calls **tw telecom**'s toll free number to report system trouble or enters a trouble ticket via **tw telecom**'s web portal. For more information on how to enter a trouble ticket online, please refer to Appendix E - A.
- The Customer Service Center receives the call or on-line request and creates a customer ticket.
- Customer is advised to provide as much information as possible, such as circuit ID, billing telephone number, local access information, etc.
- The ticket is then handed off to a Maintenance Technician. The ticket is worked within the appropriate group (i.e., Switch, Transport, Data).
- All DS-3 and above troubles are paged to Director level and below within the Operations Center.
- Ticket status is provided to the customer as appropriate for that outage and agreed upon with the customer.
- Once the trouble is resolved, **tw telecom** follows up with the customer for ticket closure.

tw telecom Proactive Monitoring and Surveillance

Event Alarm Severity Levels are defined as:

- **Red/Critical:** Problem is operationally impacting or has direct impact on the network and must be resolved immediately.
- **Yellow/Major:** Problem requires attention and if not resolved could directly impact the network or Quality of Service.
- **Green/Minor:** Problem requires attention (i.e. threshold alarm), and it could escalate if not resolved. Administration and maintenance issues are classified in this level.

Alarms are generated at the service or network level. The process for resolution includes:

- The DOC receives alert via alarm monitoring systems.
- Initial isolation occurs and service impact is identified.
- Initial outreach to the customer occurs as part of the fault isolation process.
- Field operations and the Customer Technical Assistance Center (CTAC) resolve on-net/off-net troubles.
- All DS-3 and above troubles are paged to Director level and below.
- Status to the customer as appropriate for outage and agreed upon with the customer.
- Ticket closure with the customer: Ticket closure always follows discussion with the customer including confirmation that **tw telecom** has addressed any issues within our control and obtaining the customer's approval to close the ticket.
- Data troubles resolved by data technicians.
- All products supported by next-level network operations support (Tier II) as appropriate.

tw telecom Severity Levels

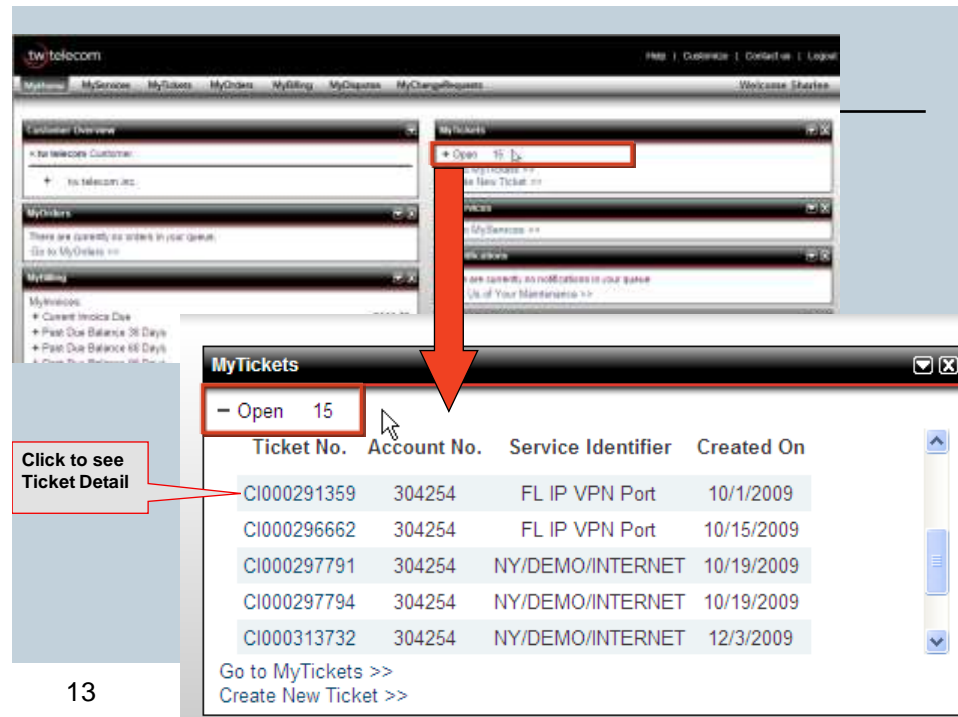
Service outages receive hourly escalation and updated status.

Services of multiple DS-1s are considered a "Major Outage" and are escalated internally on an hourly basis.

Catastrophic outages receive immediate internal escalation and have the attention of various levels of management until repaired.

A detailed escalation list is included in Appendix E - B. This list consists of all departments of management in the Operations Center, such as ordering, billing, provisioning and maintenance. All levels of escalation are performed through the Operations Center for record purposes.

Example screen shots from the MyTickets portion of the portal are shown below.



The screenshot shows the tw telecom MyTickets portal. A red box highlights the "Open 15" status in the top right corner. A red arrow points from this box to a larger "MyTickets" window. In this window, a red box highlights the "Open 15" status, and a red callout box with the text "Click to see Ticket Detail" points to the first ticket in the list.

Ticket No.	Account No.	Service Identifier	Created On
CI000291359	304254	FL IP VPN Port	10/1/2009
CI000296662	304254	FL IP VPN Port	10/15/2009
CI000297791	304254	NY/DEMO/INTERNET	10/19/2009
CI000297794	304254	NY/DEMO/INTERNET	10/19/2009
CI000313732	304254	NY/DEMO/INTERNET	12/3/2009

Go to MyTickets >>
Create New Ticket >>

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The screenshot displays the tw telecom Ticket Management System interface. On the left, a 'My Tickets' sidebar shows a list of tickets with columns for 'Ticket No.' and 'Status'. The first ticket, 'C-993234308', is highlighted in green and has a status of 'Open'. A red arrow points from this ticket to the main 'Ticket Detail' view on the right.

The 'Ticket Detail' view shows the following information:

- Ticket ID:** C-993234308 (highlighted with a red box)
- Customer Ticket Number:** 1098
- Ticket Submitted by:** S. WRIGHT
- Product Type:** ETC
- Service location:** 668 OLD COMMON WAY, THOMASVILLE, NC
- Trouble Description:** Satellite Dish Placement
- Resolution:** (Empty field)
- Created On:** 2/4/2016 10:26:56 AM
- Closed On:** (Empty field)
- Time To Repair (hrs add BD):** (Empty field)

Below the ticket details is a 'Ticket History' table:

Date/Time	Description
2/4/2016 10:26:08 AM	Your Ticket has been picked up by a technician.
2/4/2016 10:34:05 AM	Technician provided status to customer.
2/4/2016 11:37:34 AM	Technician provided status to customer.
2/4/2016 11:38:00 AM	Your Ticket has been put on hold pending a call back from you.
2/4/2016 12:58:58 PM	Technician provided status to customer.
2/4/2016 12:57:40 PM	Technician provided status to customer.
2/4/2016 12:58:16 PM	Your Ticket has been put on hold pending a call back from you.

On the right side of the ticket detail view, there is a 'Communicate!' section with a 'Select' dropdown menu and a 'Submit' button.

At the bottom right, a red arrow points to the 'Ticket Action' section, which contains a 'Select' dropdown menu and a 'Submit' button.

3.9. Escalation Procedures

tw telecom has included the escalation list with procedures in Appendix E - B.

3.10. Customer Notification of New Services

If **tw telecom** adds a new Service/product to our portfolio and it is awarded under the CTSA, we will notify DIR through our Quarterly Stewardship meetings and via our Marketing plan. Communication would include a regularly scheduled mailing or email to the DIR customers. One component of this regularly scheduled communication would include any product changes or additions that may be of interest to DIR or DIR's customers.

APPENDIX E - A – CREATING TROUBLE TICKETS



Create_a_Ticket_for
_Customers3.pdf

APPENDIX E - B – ESCALATION LIST



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